EXECUTIVE SUMMARY

INTRODUCTION

In late 2004, NorthWestern Energy held a non-binding "Open Season" to solicit interest in transmission from Townsend, Montana to the Borah / Brady Substation area in Southwest Idaho, a distance of over 300 miles. Initially, over 2,000 MW of interest was requested by various generators, utilities, and other participants. The study process began with a feasibility study to determine what options there might be to export bulk power from Montana into southeastern Idaho.

Once completed, NorthWestern moved to the second stage of the process, which required a financial commitment by the participants. This stage of the process narrowed down the participant interest to 850 MW. Subsequent electrical studies by NorthWestern Energy determined that a number of voltage options exist.

POWER Engineers was retained to evaluate the options of 230kV, 345kV, and 500kV. In addition, a direct current (DC) alternative was evaluated. End points were identified by NorthWestern Energy for each of these options, and a siting study was conducted to determine preferred and alternative routes for each. Likewise, alternative sites were identified for a new substation at Townsend and at Ringling, and preferred sites were identified for each.

This stage of the process is referred to as a Facility Study, and includes further analysis of alternative projects, including identifying alternative routes, a preferred route, various voltage options, AC vs. DC, design criteria, conductor and structure selection, and estimated costs for the various options. Transmission line cost estimates were prepared for each of the preferred routes for each voltage option

This Executive Summary summarizes the major findings of this study.

Siting and Routing

The Project study area was defined to include feasible alternatives for the location of a 500kV transmission line, or alternatively a 230kV or 345kV line. The size of the study area is approximately 25,000 square miles. Major physiographic features, jurisdictional boundaries, sensitive land uses and existing utility corridors helped to define the study area boundaries, representing the limits of reasonable or feasible transmission line alternatives for the Project. The study contains portions of southwestern Montana and eastern Idaho. It includes parts of seven National Forests and 9 Field Offices of the Bureau of Land Management (BLM). Approximately 20% of the *study area* is National Forest System lands, 25% are public lands managed by the BLM, 27% are managed by the states of Montana and Idaho, and 28% of the lands are privately-held. The extent of the study area and Preferred Alternative is illustrated below.

Existing land use and environmental data was collected and mapped within the study area, and constraints and opportunities were subsequently determined and mapped to assist with the identification of possible alternative routes and substation sites for the various voltage options. Corridors were first identified for each of the voltage options that would avoid or minimize the crossing of sensitive land uses and environmental constraints to the extent possible. Within these corridors the study team used aerial photography to help identify assumed route centerlines. The resulting network of alternative routes were given identifiers and a preliminary analysis of impacts was determined by using the collected and mapped

data. Routes were then compared for each of the voltage options, and preferred routes were recommended.

Proposed Routes and Substation Sites

The Preferred Alternative for the 345kV option and the 500kV AC option is the shortest of the 500kV alternative routes at approximately 301 miles, and parallels the existing Mill Creek-Antelope-Brady 230kV transmission line more than the other alternative routes. It would originate at a new substation located southeast of Townsend just east of the Missouri River. The route would follow the existing Colstrip 500 kV transmission line on its south side, and diverge approximately 18 miles west of the Missouri River (See Figure below). This alternative would continue westerly crossing the Boulder River and S69 about 9 miles southeast of Boulder, and then generally southerly on the east side of the Beaverhead-Deerlodge National Forest roughly parallel to Whitetail Road for about 7-miles.

It would then turn southwest across I-90 about 6-miles west of Whitehall, and then south along the west side of the Jefferson River. The line would be located about 4-miles northwest of Twin Bridges, cross the Big Hole River about 9-miles east of Glen, and would continue generally southwest roughly paralleling the Beaverhead River approximately 5-6 miles from its west side until it turns due west about 5-miles east of the I-15 corridor, crossing the highway about 10 miles north of Dillon.

This alternative would then cross the existing 161 kV transmission line located between Dillon Substation and Dell Substation in a southwesterly direction until it converges with the existing 230 kV transmission line locates between Mill Creek Substation and Peterson Flats Substation, approximately 5.5-miles north of S278. The line would then parallel on the east side of the existing 230kV corridor across the Idaho National Laboratory (INL) and to Borah Substation, a distance of approximately 193-miles.

The new Townsend Substation would be located approximately 4,000-feet east of Flynn Lane northeast of its intersection with Dry Creek Road. The parcels are vacant and currently serve as pasture. The eastern parcel contains agricultural outbuildings and a residence, located about 1,030-feet the southwest. Access to the site would be from Dry Creek Road, and the substation would not require additional access road construction. Adjacent land use is a mixture of center-pivot irrigation and pasture.

The preferred 230kV route would parallel the existing 161kV and 230kV transmission line corridor all the way from Mill Creek Substation to Borah Substation.

The preferred route for the 500kV DC option would parallel the preferred option for the 345kV and 500kV AC options (described above) to a point just north of Borah, then parallel the northernmost 345kV line from Borah to Midpoint Substation.

Environmental Considerations

The Proposed Routes would encounter agricultural lands and stream crossing throughout this part of Montana, and mitigation of impacts in these areas could include use of tubular steel single poles to reduce the footprint of the project. Additionally, there are many dispersed residences and land subdivisions along these routes, particularly in the areas west and south of Whitehall along the Jefferson River valley and in the Dillon area. The INL would be crossed by the proposed route, but preliminary inquiries have determined that obtaining land rights to cross is possible. In fact, the BLM retains the authority to grant a right of way across this area, of course, subject to compliance with the resource plans and the mission of the INL.

Of the alternative routes analyzed and compared, the preferred route would cross the fewest streams and sensitive riparian zones, and would require the least amount of new road construction. Other potential impacts that would result from construction and operation of the project include possible raptor predation to sage grouse during breeding periods, some loss of habitats for sensitive animals and plants, and visual impacts to communities, recreation areas, and sensitive highways. Socioeconomic impacts to the counties would be positive.

The alternative route through the Madison Valley would cross through an area considered to be part of the Greater Yellowstone Ecosystem, an area that would likely result in significant public, agency and environmental activist opposition. Significant animal habitats were not found in the literature along this route, but the area is widely recognized to be sensitive.

Cultural resources, particularly historic mining sites and districts, are found in several areas within the study area, including near Virginia City and, of course, Butte. These resources were largely avoided by the alternative routes, and are not a part of the Preferred Route. Irrespective of this fact, cultural resources will be a major consideration during the environmental review process, and expected resources investigations are expected for pre-historic and historic resources, as well as off-reservation tribal concerns.

The proposed substation is in a low sensitivity area, and would require no new access road construction. No agricultural lands would be taken out of production as a result of substation construction.

Environmental Review

The Preferred Route would cross 11 miles of National Forest lands, and as such, would require a Special Use Permit from the USDA Forest Service. Forest Service would likely be a Federal Cooperating Agency for the environmental review under the National Environmental Policy Act (NEPA), the Federal law requiring environmental review for Federal decision making. This route would also cross 110 miles of public lands managed by the BLM, and establishing the route on public lands would require a grant of right of way and environmental review under NEPA. Crossing of the INL would similarly require a grant of right of way from the BLM, but would be subject to review by INL for compliance with their mission and resource plans. INL, an agency of the Department of Energy, would be a Federal Cooperating Agency.

The project in Montana would require a Certificate of Compatibility from the State of Montana and compliance with the substantive requirements of the Major Facility Siting Act. An application, once completed, requires environmental review under the MEPA, and Montana DEQ would be the State Lead Agency for such review. The Montana DNRC would be a State Cooperating Agency for crossings of State Trust Lands they manage for the benefit of schools in Montana.

Joint environmental review (i.e., NEPA and MEPA) between the Federal agencies and the State of Montana will be done with a single Environmental Impact Statement (EIS), one that will meet the standards of both. The State of Idaho has no corresponding environmental law, and will rely on the Federal environmental review and normal permitting requirements. It is possible that the FS and the BLM will be Federal Co-Lead Agencies, but a more likely scenario is for the BLM to take the lead.

The MFSA Application must be prepared and accepted as complete prior to the MEPA process starting, a process that essentially is environmental review of the project proponent's application. MFSA requires that the application be prepared to substantive standards outlined in the Administrative Rules of Montana. Some public scoping is normally required to meet the MFSA requirements, and this could include public

meetings and/or agency consultations and elected official briefings. MEPA and NEPA requirements are procedural, which means that issues to be addressed in the environmental review process are defined during the public and agency scoping process.

Design and Construction

Four different alternative lines were investigated for a transmission line from north central Montana near to an interconnection point on Idaho Power's system in the south:

- 230kV line capable of 450MW of power transfer
- 345kV line capable of 650MW of power transfer
- 500kV AC and DC alternatives capable of 875MW of power transfer

For the three high voltage alternatives, a new Townsend substation would be created that would cut the existing Colstrip transmission lines in and out of the station as well as the new line south. The location of this proposed station is near the ownership boundary of the Colstrip lines between BPA and Northwest Energy.

The 230kV alternative would terminate at Northwest Energy's existing Mill Creek Substation and traverse south parallel to existing Northwest Energy and Idaho Power transmission lines to Idaho Power's Borah Substation, a distance of approximately 270 miles. Both stations currently have 230kV service and would require additions to the existing bus. A phase shifting transformer at Townsend and series compensation stations at Townsend and a middle point on the line are assumed within the estimate.

The 345kV alternative would terminate at the new Townsend substation and traverse southwest to a location near the Mill Creek Substation and south parallel to existing Northwest Energy transmission lines to Idaho Power's Borah Substation, a distance of approximately 301 miles. Borah Substation currently has 345kV service while the new Townsend Substation would require transformation between the Colstrip lines and the new line south. The 345/500kV transformer, a phase shifting transformer, and series compensation stations at Townsend and a middle point on the line are assumed within the estimate.

The 500kV AC alternative would terminate at the new Townsend substation and traverse along the same path as the 345kV estimate to Idaho Power's Borah Substation, a distance of approximately 301 miles. Borah Substation currently has no 500kV service. It is assumed that Idaho Power would construct a 500kV yard at Borah for receipt of this new line. The new Townsend location would be a switching station with five terminals for the two Colstrip lines in and out and the new Borah line south. A phase shifting transformer and a series compensation station at Townsend and a middle point on the line are assumed within the estimate.

The 500kV DC alternative would terminate at the new Townsend substation and traverse along the same path as the other lines but turn west at a location north of the Borah Station proceed to Idaho Power's Midpoint Substation, a distance of approximately 390 miles. Midpoint Substation currently has a 500kV section of the station. DC to AC converter stations are assumed between the new line and the AC bus at both ends of the project. The new Townsend location would be a switching station with five terminals for the two Colstrip lines in and out and the new Borah line south.

Design criteria were evaluated for the 500kV AC scenario, and included analysis of mechanical loading, wire tension limits, electrical loading, insulation, structure air gap, ground clearance, and grounding. The

conductor study analyzed the various conductor types and concluded that a three-bundle 1590 conductor system be used for the 500kV AC line, although a smaller conductor system would likely be the more economical choice for the given electrical loading.

The structure study evaluated various commercially-available tangent tower types for the proposed 500kV AC line. Lattice structures are the preferred construction type for the project because they offer a more efficient solution to the long spans and heavy mechanical loadings for the EHV line. In some instances, tubular steel poles may be required for mitigation and a smaller footprint (e.g., through agricultural lands), but tubular steel structures are heavier and costlier than their lattice counterparts. Guyed lattice structures have been successful in some parts of the country, and were in 2006 used to construct the Wyoming to Jackson's Ferry East 765kV line in Virginia and West Virginia. NorthWestern operates the Costrip 500kV lines, which are guyed delta structures. The concerns with guyed structures include vandalism and reliability, but the cost is lower due to much less steel being required for each structure. The cross-rope suspension tower was also considered, but this structure would require significantly more right of way to accommodate its structural width and guying requirements.

The 500kV line along the Preferred Route would be constructed mostly on relatively flat ground (82%) on rangelands or high desert. A small portion of the flat lands would be adjacent to agricultural lands. A small portion of the project would be in rugged terrain with slopes exceeding 20%. These areas occur in the Beaverhead-Deerlodge National Forest north of Whitehall crossing Bull Mountain, southwest of Silver Star southeast of the Highland Mountains, adjacent to the existing 230kV line north and southwest of Clark Canyon Reservoir, and near the Continental Divide. Tree cutting for construction and operations would be limited to riparian areas and where the line crosses the Beaverhead-Deerlodge and Targhee National Forests. Surface lava flows result in interesting construction challenges throughout the southern portion of the route (i.e., in Idaho). Basalt is near the surface in most of this area, and is exposed in some areas, and this would result in more difficult and expensive footings for the structures. Roads would be very difficult to construct across surface basalt flows, but little or none of this is expected along the Preferred Route. Precise geological data on subsurface basalt is somewhat limited in the project area, and pre-construction geotechnical investigations would determine the extent to which these areas will be a problem.

Major milestones in the project schedule as currently estimated include completion of the MFSA Application in January of 2008, Grant of Right-of-Way on public lands in December of 2009, issue of the EIS ROD near September of 2009, construction surveys, engineering and bidding beginning April of 2009, private right-of-way acquisition completed in June of 2010, and an anticipated in service date of December 2012.

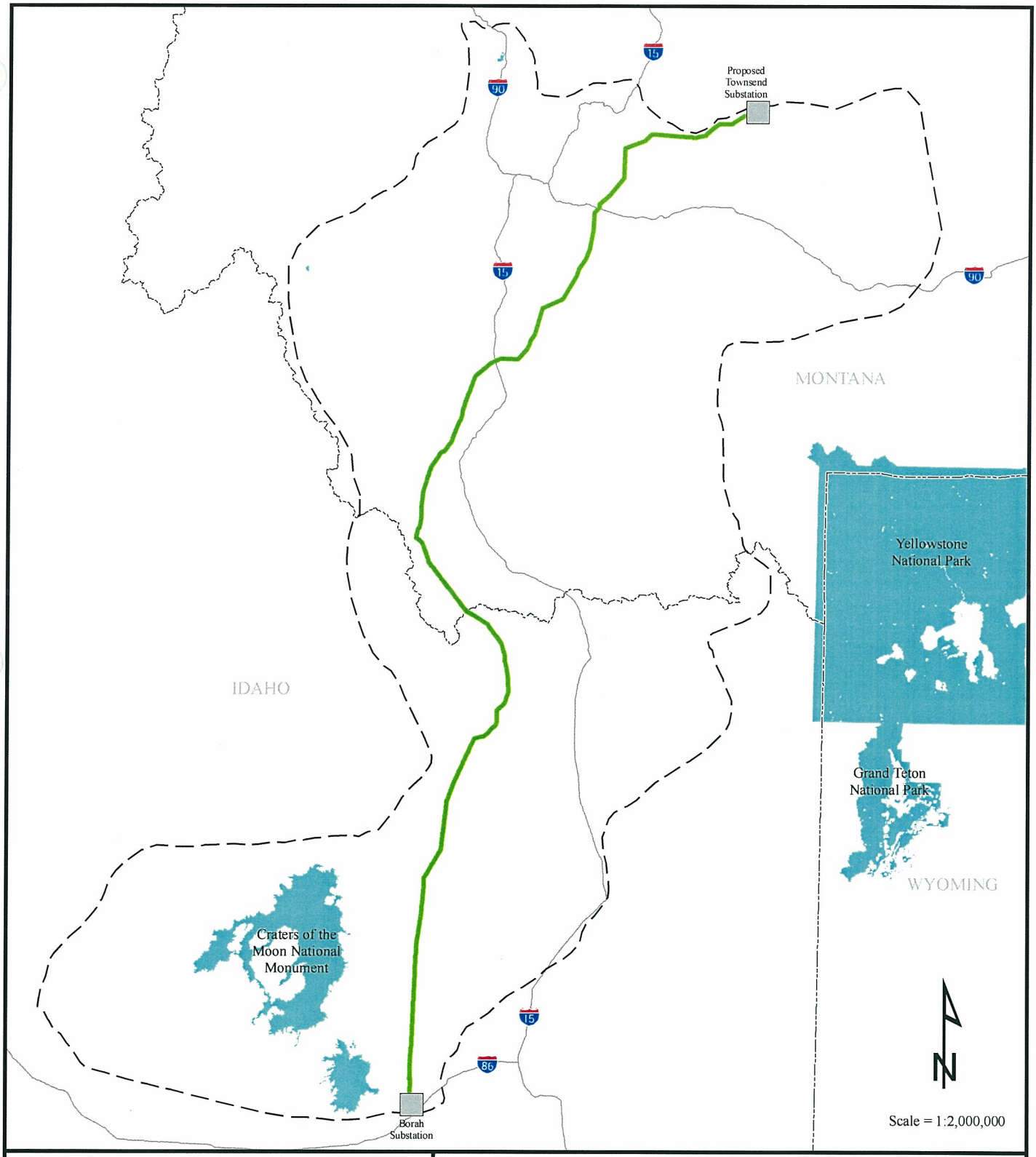
The survey and engineering task of the project may be flexible to accelerate project completion. However, higher risk levels would be incurred the earlier survey and engineering is started before issue of the anticipated September 2009 Record of Decision (ROD). A certain level of risk is currently built into the preliminary schedule, with the engineering tasks currently projected to start 8 months before the ROD. During the Draft and Final Environmental Impact Statement, significant adjustments to the project centerline as a result of public comment, appeals and agency requirements may necessitate additional survey work, tower re-design and layout adjustment, access road plan modification, specification and contract document adjustments, and other changes that would result in additional costs incurred by NWE. This may be a significant percentage of the engineering costs if the agencies feel major re-routing in response to environmental issues or public feedback is necessary to issue a Record of Decision. With a construction cost of over $1.0 million per mile for the transmission line component of the project, changes that result in a longer line would also significantly affect the overall costs of the project. This additional work and project expense may actually push project completion past the anticipated December 2012 date.

The total project cost projected for the 500kV Townsend to Borah Preferred Route is as follows:

Borah Substation Upgrades:	$11,090,000
New Townsend Substation:	$62,378,000
Compensation Station:	$22,273,000
Transmission Line:	$418,934,000
Environmental and Permitting:	$ 7,740,660
Right-of-Way:	$ 14,762,387
Total Cost:	**$537,179,000**
Cost per mile:	***$1,778,700***

The total project cost projected for the 345kV Townsend to Borah Route is as follows:

Borah Substation Upgrades:	$7,397,000
New Townsend Substation:	$64,324,000
Compensation Station:	$15,685,000
Transmission Line:	$290,673,000
Environmental and Permitting:	$ 7,740,660
Right-of-Way:	$ 14,762,387
Total Cost:	**$400,583,000**
Cost per mile:	***$1,326,400***



Legend

Preferred Route

Study Area Boundary

Townsend to Borah Preferred Route

POWER ENGINEERS

NorthWestern Energy